

ABSTRACT OF THE DISCLOSURE

A hybrid electric vehicle includes an internal combustion engine, an electric motor and a transmission. A turbocharger is in fluid communication with the internal combustion engine. Moreover, a generator is mechanically coupled to the turbocharger and thereby driven by exhaust gas from the internal combustion engine. The generator can provide electricity to the motor and/or a battery while simultaneously providing altitude compensation for the internal combustion engine so that the internal combustion engine output remains at the same power and efficiency as altitude and environmental conditions change. The turbocharger can also be used for power boost if desired. The exhaust gas driven generator system can be deployed in conventional vehicles as well to charge the battery and/or power electrical accessories, thereby replacing the alternator.